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THE TREATMENT OF ACCIDENTAL HAEMORRHAGE

BASED on GENERAL PRINCIPLES

and

on the STUDY of 200 CASES.

T H E S I S

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## INTRODUCTION.

The present paper is based primarily on the study of a series of cases of accidental Haemorrhage, occurring in the practice of the Coombe Lying-in Hospital, Dublin, and including all instances of this complication, that were diagnosed as such, between 11th July 1899 and 2nd March 1907. This series comprises 106 cases, many of which are of a nature too slight to call for separate attention, though they are required as material for statistics.

To this has been added a series from the Edinburgh and Glasgow Maternity Hospitals, and from the Queen Charlotte Lying-in Hospital in London. From all of these, trivial cases have been excluded: the two former, so far as could be ascertained, include all others occurring between the extreme dates.

A further group of cases has been selected from the literature, as affording points of interest in regard to treatment, and includes a transcription by Colcough<sup>1</sup> from the records of the Rotunda Hospital. The complete series formed the groundwork of the excellent paper, published by him in the Journal of Obstetrics and Gynecology in 1902.

This compilation was undertaken in order that, if it were possible, deductions might be drawn as to what clinical features could be taken as indicative of various lines of treatment, and to bring forward, from schools that differ in tradition and

INTRODUCTION Continued

routine, fresh material to assist in the provisional selection of one or other of these methods, as shall best be adapted to the various types of clinical case that call for active interference.

The matter is presented in form that is, in general, as short as possible.

The various methods of case-taking, that obtain at different hospitals, make difficult a comparison that shall be approximately free from fallacy.

It has been my intention to consider only such points as have an obvious and direct bearing on the present thesis. This has involved the free rejection of much material of interest.

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Summary of Deaths

9.

Classification, with Notes on Statistics

10.

FOR CASES, SEE APPENDIX.



T A B L E I.Treatment in CONCEALED Haemorrhages.

<u>Recovered</u>	<u>Died</u>	<u>Total</u>
15	8	23
<hr/>		
of the 15 Recoveries	7 were plugged and bound, in one dilatation was completed with Champetier de Ribes bag, and in one forceps were applied.	
	6 Treatment expectant	
	1 Accouchement forcé	
	1 Champetier de Ribes bag and forceps	
	<hr/>	
	15	15
	<hr/>	
of the 8 deaths	3 treatment expectant	
	2 Accouchement forcé	
	1 Version	
	1 Hysterectomy	
	1 Rupture of the membranes	
	<hr/>	
	8	8
	<hr/>	
		23
		<hr/>

INFANTILE MORTALITY 83%

The majority of recoveries occurred in cases too slight to call for any special treatment. - that is the 37 already referred to.

T A B L E     II.

Treatment in MIXED Haemorrhages

<u>Recovered</u>	<u>Died</u>	<u>Total</u>
60	25	85
<hr/>		
of the 60 Recoveries	28 were plugged and bound. In two of these forceps were used. In one dilatation was completed with a Champetier de Ribes bag.	
in	11 treatment was expectant.	
"	6 Membranes were ruptured, and the case left to nature.	
"	7 Bags were used for dilatation.	
"	5 Version or a foot brought down.	
"	1 forceps.	
"	2 accouchement force	
<hr/> 60		60
<hr/>		
of the 25 deaths,	5 were plugged and bound.	
	10 accouchement force	
	4 Forceps, one after plugging	
	3 Expectant	
	2 Rupture of membranes (in one a leg brought down)	
	1 Manual dilatation, membranes ruptured, and delivery left to nature	
<hr/> 25		25
<hr/>		
		85

T A B L E   I I I .Treatment in EXTERNAL Haemorrhages.

<u>Recovered</u>	<u>Died</u>	<u>Total</u>
98	0	98
<u>=====</u>	<u>=====</u>	<u>=====</u>

of the 98 Recoveries, in 44 the treatment  
was expectant.

19 were plugged  
and bound

11 Membranes were  
ruptured .

9 Version (one  
dilated manu-  
ally, and one  
with Frommer)

3 Champetier de  
Ribes bags.

1 Accouchement  
forcé

1 Manual dilata-  
tion.

<u>98</u>	<u>98</u>
<u>=====</u>	<u>=====</u>

NOTA BENET A B L E IV.

Shewing the different Methods of Treatment with  
Results.

	Recov- eries.	Deaths	Total	Percent- age Mort- ality
Treatment by Plug- ging . . .	54	5	59	8.5%
Expectant Treatment	28	6	34	17.7%
By Rupture of Mem- branes . . .	16	3	19	15.7%
Accouchement Force	4	12	16	75%
By other Methods, alone or combined	28	7	35	20%
Slight Cases, not requiring treat- ment . . .	37	-	37	0%
	167	33	200	

Total Death rate, excluding 37

slight cases . . . . 19.7%

The same, with the omission of all

cases treated by plugging. . 24.5%

9.  
S U M M A R Y  
of  
D E A T H S .

Post Partum Haemorrhage was a direct or contributory cause in 11 cases (33%), in 6 of which there had been an accouchement force, 3 followed forceps extraction, in one the child had been expressed, and in one the placenta was firmly adherent. This is the only example of the condition in the present series. The duration of the third stage, when noted, seldom exceeds 5 to 10 minutes, and it is common for the separated secundines to follow immediately on the completion of the second stage.

Ante Partum Haemorrhage before delivery was enough to account for death in 8 cases.

Shock and Haemorrhage combined to bring about a fatal issue in 7 instances, and in one, shock alone was the outstanding feature.

Hysterectomy, with death on the seventh day (no post mortem examination allowed).

Rupture of Uterus and

Syncope, which came on unexpectedly 2 hours after delivery, accounted for one apiece. Two deaths took place during the puerperium: one woman having chronic nephritis: in the other no cause was given.

C L A S S I F I C A T I O N  
WITH NOTES ON THE STATISTICS.

A classification has been adopted that is of German origin, namely, Concealed, Mixed and External. It is purely clinical. All bleeding is at first internal, and the proportion of blood retained in utero to that expelled is an index of the degree of uterine inertia, and of the gravity of the case. Sooner or later there is, in almost every instance, some escape of blood, however slight, so that a case may be at first 'concealed' and later 'mixed'. The gravity of internal haemorrhage depends, not on the fact that the blood happens to be out of sight, but that the uterus is more or less distended and paralysed. An exception must be made where there is mechanical obstruction to escape of blood through the os. However, extensive bleeding is impossible if the uterus is contracting well. Such a case is rare and often is not diagnosed till after delivery. This classification seems to be the best available for purposes of comparison. As affording indications for treatment, the Mixed and Concealed varieties are taken together. There must always be a margin of error from overlapping between the extreme and middle groups, but with the massed

CLASSIFICATION Continued

results of all observers, it may be expected to give a fair approach to accuracy.

The mortality percentage of treatment by accouchement force calls for special comment. There is a tendency for its adoption as a last resort, when the woman is dying in spite of other treatment. Discounting this fallacy, which cannot be excluded without plunging into the treacherous waters of selection, the figures are sufficiently remarkable. No cases have been excluded from any group because they were moribund on admission, or because death was due in part, or altogether, to an intercurrent cause. In the long run, such errors tend to cancel one another, and the personal equation is avoided - an equation that, in compilation, is twofold. The entry 'moribund on admission' may, with the clinical observer, be born of wisdom after the event, or of a pessimistic temperament; while, with the maker of statistics, it is easy for a subconscious wish to be the father of a mortality percentage.

H I S T O R Y

Hippocrates<sup>(2)</sup> regarded all bleeding before delivery as being due to separation of the placenta from the fundus. Portal, in 1664, was the first to modify this view by recognising the occurrence of abnormal implantation, and placenta praevia came to be regarded as the constant cause of ante partum haemorrhage.

Smellie,<sup>(3)</sup> whose work on the general principles of midwifery appeared in 1751, was aware of the distinction between the two, and considered that rupture of the membranes generally sufficed to check the bleeding, in cases where the placenta could not be felt. He learnt from Hoffman the value of the vaginal plug, using fine tow dipped in vinegar and water.

It remained for the elder Rigby,<sup>(4)</sup> in his classical essay, to apply the terms 'accidental' and 'unavoidable' to ante partum haemorrhages, and to publish clearly the distinction between the two.

He advises rupture of the membranes when pains are setting in, and the os is beginning to dilate. He did not discriminate between accidental haemorrhage, and placenta praevia lateralis.

In 1776 Leroux<sup>(5)</sup> made known his method of treating all haemorrhages, ante and post partum, 'by introducing such quantities of lint moistened with vinegar into the vagina, as will completely



HISTORY Continued

fill it, and press upon the os uteri, preventing the escape of blood, and stopping the flow by pressure and coagulation. This will check the haemorrhage enough to wait for dilatation of the os, or for natural delivery'. He pays a tribute to Smellie as 'le plus intelligent des accoucheurs anglois'.

John Burns,<sup>(6)</sup> in an essay published in 1807, writes at length on the value of the vaginal tampon, which he also eulogises in the 5th edition of his text book. In the 3rd edition<sup>(7)</sup> he gives two lines of treatment for ante partum haemorrhages, (a) expectant, when there are good pains, and the labour is advancing regularly, and (b) by turning or instruments, if the pains are weak or decreasing, and the bleeding increasing.

In 1832 Ingleby<sup>(8)</sup> discusses the propriety of (a) rupturing the membranes, in preference to immediate delivery, and (b) insertion of plugs until there is relaxation of the os. In spite of Rigby's teaching, we find that, up to the middle of the century, there was in general no clear distinction between the 'accidental' and 'unavoidable' varieties of bleeding.

But by the time of Braxton Hicks, <sup>(9)</sup> the mists of confusion had cleared away. The 23 cases, reported in his paper, will be referred to in another place. The treatment that he recommends is rupture of the membranes, control and stimulation

HISTORY Continued

of the fundus, and emptying of the uterus as soon as possible, adding as a rider, 'But when the patient is in extremis, stimulate and wait for improvement: should the parts be dilating or dilatable, apply forceps, or turn.'

Ramsbotham<sup>(10)</sup> discusses chiefly rupture of the membranes, as being the practice that he recommends. He states that accouchement forcé has many supporters, but that it is a dangerous proceeding. He doubts the advisability of the plug, "because, notwithstanding the blood may be prevented flowing externally, it may still collect in such quantities in utero as to destroy life. If such be the case then the tampon must prove a dangerous application".

Goodell,<sup>(11)</sup> in his analysis of 106 cases, arrives at no conclusion in regard to treatment.

Davis,<sup>(12)</sup> 5 years later, gave an analysis of 41 cases of his own, in which rupture of the membranes was the general treatment. Failing that, the vagina was plugged, and a broad bandage applied round the abdomen. This procedure was hardly in keeping with the generally accepted teaching of his contemporaries, and is an interesting suggestion of later methods.

In 1886 Galabin<sup>(13)</sup> advised vaginal plugging when the cervix was undilated, and labour not begun: advice that appeared in Hirst's<sup>(14)</sup> first edition, three years later.

HISTORY Continued

Spiegelberg<sup>(15)</sup> gives his treatment separately for severe external and internal haemorrhages. In regard to the latter he says, "Do not interfere too hastily, or rupture the membranes as early as is generally recommended; for stretching of the parietes checks haemorrhage, by raising intra-uterine pressure. Therefore..... stimulate, and later, when the lower segment is better prepared for the exit of the foetus, drain slowly, and assist delivery by expression." He warns against quick delivery, or accouchement forcé. For severe external cases he says, "Plug the vagina, and watch the fundus. The plugs provoke expulsive activity, and pains are the most certain way of checking the haemorrhage. Hence, rupture the membranes, if the cervix is properly prepared for labour."

In 1894 Smyly<sup>(16)</sup> published the treatment of plugging the vagina, together with compression of the abdomen by a firm binder; a treatment he had introduced into the practice of the Rotunda Hospital, Dublin. Purefoy has since improved the technique by the application of a tight perinaeal pad.

The usual modern lecture or text book, published prior to the last two or three years, has, as its basis of treatment, rupture of the membranes, followed by turning or forceps; and, if necessary, a preliminary dilatation of the os by hand, tents, bags, or by some special instrument. Many of the

HISTORY Continued

authors point out that to plug is not good treatment, as for example Williams,<sup>(17)</sup> King<sup>(18)</sup> Barbour,<sup>(19)</sup> Hirst,<sup>(20)</sup> and Holmes,<sup>(21)</sup> who condemn it strongly. He inclines to rapid delivery, but states as a conclusion, "We cannot lay down rules of treatment, because no idea can be gained as to the amount of separation that has occurred, or that is likely to occur later.

Whitridge Williams<sup>(22)</sup> may be taken as representing the latest opinion prevailing in the American schools. He says:- "In the more marked forms, the life of the mother can only be saved by prompt evacuation of the uterus; in less severe forms, expectant treatment will suffice. If labour has not set in, dilate the cervix, incising it if rigid without hesitation. Not uncommonly profuse haemorrhage may follow." Certain recent text books in this country, e.g. Eden<sup>(23)</sup> and Jellott<sup>(24)</sup>, give the preference to hysterectomy as against accouchement forcé. This opinion is shared by many of the leading British obstetricians.

The Dublin teaching has been represented by the papers of Tweedy<sup>(25)</sup>, Colcough<sup>(1)</sup> and Macan<sup>(26)</sup>. The divergence of opinion on this subject by obstetricians of equal distinction adds to the intrinsic interest that it already possesses.

CHIEF CAUSES of DEATH.

1. A fatal haemorrhage before or during labour.
2. Haemorrhage and Shock combined, the shock being due to
  - (a) Haemorrhage.
  - (b) Sudden emptying of the uterus.
  - (c) Stretching or lacerations of the cervix.
  - (d) Distention or rupture of the uterus.
3. Post partum haemorrhage.

C A U S E S   o f   D E A T H .

I. A fatal haemorrhage before or during labour

accounted for 26% of the deaths in the present series. It occurs most often in women who go untreated; either because of the quickness of the bleeding or because of delay in treatment. Simpson has pointed out the indifference of many women when they have a flooding, and their carelessness in regard to it. It is often not possible to estimate the total loss; in the history given by the patient or her friends the wildest inaccuracies prevail, and it is better to judge of it by her condition when seen. A fair approximation can be made to loss by soakage into plugs or linen. Flowing blood, in some cases, and clots always, can be measured. A fatal haemorrhage may be taken roughly as anything over two quarts, but the personal equation varies within wide limits. A quart of clot is, according to Dakin,<sup>28</sup> equivalent to three pints of fresh blood. Mme Henri<sup>29</sup> reports a recovery where the clots weighed  $2\frac{1}{4}$  lbs., with a further loss of blood that was not measured. This is

CAUSES OF DEATH Continued

is the severest non-fatal haemorrhage that I have been able to find in the literature of this subject.

II. Haemorrhage and Shock combined. (22.2%).

Much confusion prevails in the literature of Obstetric haemorrhages in the use of the terms syncope, shock, and collapse; the three are often used as synonyms. Wright<sup>30</sup> of Toronto is of opinion that most of the symptoms of concealed haemorrhage are due to shock from distention and not to loss of blood. In support he quotes two cases of Simpson's, where labour was induced by the injection of a few ounces of water between the chorion and the uterine wall, death resulting in both cases. The value of this observation is lessened by reference to the cases quoted,<sup>31</sup> where in neither instance was accurate note made of the amount of fluid injected; and in both cases death was stated to be due to rupture of the uterus. Certainly, shock may have combined to bring about the fatal issue. But, in the same place, Simpson recorded an alarming syncope, following the same procedure, in a patient of his own.

In/

CAUSES of DEATH.II. Haemorrhage and Shock combined (contd.)

In many reported cases the clinical picture presented is typically that of shock. Shock has now ceased to be a vague term covering various conditions. It is necessary to refer briefly to its pathology which the researches of Crile<sup>31</sup> have placed on a definite basis, whence can be deduced a rational treatment.

Its essential feature is a low blood pressure that is not cardiac in origin, but is associated with dilatation of the splanchnic vessels. The chief causes are given as (1) a steady fall in blood pressure; and (2) a vasomotor paralysis of central origin. He proved that, haemorrhage excluded, the shock produced was in direct proportion to the nerve supply of the part selected for experiment, and produced severe shock by injuring the genitals.

Accidental haemorrhage might be taken as an ideal instance of the operation of these three causes, for there is a tendency, firstly, to lowering of blood pressure by bleeding, and by the removal of pressure from the splanchnic area in the emptying of the uterus. Over 150<sup>3</sup> years ago Smellie made the observation that "The



C A U S E S   o f   D E A T H .

II. Haemorrhage and Shock combined (contd.)

"The greatest danger frequently proceeds from sudden emptying of the uterus and belly." His inclusion of the word belly makes the remark one of singular interest. It is notorious that shock may follow the rapid removal of fluid from the body cavities. . . Secondly, the risk of reflex vasomotor paralysis from sudden dilatation of, or injury to, the parturient canal.

Therefore we may assume when death occurs from an apparently non-fatal haemorrhage, that shock is an additional factor in bringing about the fatal issue.

III. Post partum Haemorrhage. was a direct or contributory cause of death in 33% of the series.

The most alarming form of it occurs after rapid emptying of the uterus. But an otherwise insignificant trickle is here grave cause for anxiety, where life and death are swinging in the balance. James Young Simpson,<sup>33</sup> in a reference to artificial delivery by turning, remarks "It is the loss of the last few ounces which proves fatal." In only one of the cases was the/

C A U S E S   o f   D E A T H .III. Post partum Haemorrhage (contd.).

the condition associated with a retained placenta. It was separated manually with the greatest difficulty., and the woman died.

NOTA BENEPRINCIPLES OF TREATMENT

The principles of treatment should be especially sound in dealing with a complication that occurs, in the experience of most men, too seldom to enable them to work out a method of procedure grounded upon their clinical observation.

There are certain fundamentals that call for deep attention, if upon them we may hope to build a scheme of treatment, of which the foundations are essentially and thoroughly sound.

The life of the child may here be disregarded.

The causes of maternal death must constantly be borne in mind, together with the natural methods of recovery. Against them must be weighed methods of art; their dangers, and the hopes that they afford.

Other things being equal, to a natural process should be given the preference.

That the treatment for Accidental Haemorrhage is a complex proposition, is evident on a priori grounds: for it involves the safe conduction of the physiological process of labour, (modified only by the woman's loss of blood) together with the treatment of a morbid condition; that is to say, bleeding from early separation of a normally situated placenta.

PRINCIPLES of TREATMENT Continued

The problem for consideration is how to treat the one, without converting the other into a labour that is no longer physiological. For, should this postulate be disregarded, danger would arise in proportion to the degree of departure from what is normal for the woman's state. This danger, to justify its incurrence, must be more than counter-balanced by the probable difference in gain to be derived firstly, from the line of treatment proposed, and, as an alternative, from the best available procedure that does not incur the risk of such an interference.

The following are practical deductions:-

DEDUCTIONS FROM THE PRINCIPLES OF TREATMENT.

1. To stop the bleeding.
2. To relieve any syncope, shock, or collapse, that the anaemia or distention may have caused.
3. To prevent further loss of blood.
4. To promote delivery with the minimum of shock.
5. To guard against post partum haemorrhage.

In slight cases, occurring before the onset of labour, the ideal to work for would be to stop the bleeding and allow the pregnancy to continue.

COMPARISON between the DIFFERENT METHODS of TREATMENT

Many of the statistics relating to death from Accidental Haemorrhage do not give the treatment adopted, or, if given, it may be too indefinite to be useful for comparison. The groups remain as separate entities, whose absolute value is best seen when they stand alone. There remains, from a study of these, a distinct impression of relative values of treatment, but, though distinct, it does not lend itself to mathematical condensation.

The death rates in this series for the several treatments, shown in Table IV, are Accouchement Forcé 75%, Expectant 17.7%, Rupture of the Membranes 15.7%, Plugging and Binding 8.5%, and Version(alone) 7.6%. The two extremes are based on a total of 16 and 13 respectively. For version, with or without forceps or traction, Johnson and Sinclair,<sup>13</sup> in 1858, give a death rate of 4.9% over a series of 81 from the Rotunda Hospital. Colcough's<sup>1</sup> series gives a rate of 4.6%, plugging and binding being the routine treatment. Jellet<sup>24</sup>, from the same Hospital gives two comparable groups of 56 consecutive cases apiece. In the first group, the treatment of election for severe cases was Accouchement forcé, giving a death rate of 10.9, and the second group, where plugging was in vogue, a rate of 1.8%

COMPARISON of METHODS of TREATMENT Continued

It is a curious fact that Colcough had 3 recoveries from concealed haemorrhage, out of 3 that were so treated; and in the present series, with four, there was also no mortality.

The oft quoted cases of Braxton Hicks<sup>9</sup> and Goodell<sup>10</sup>, with their rapidly delivered children and their high death rate, might be mentioned in connection with a series of 42, published by Davis in 1865, that were treated expectantly by rupture of the membranes, or by plugging and binding, and yielding a death rate of 4.9.

A table of comparison between the different methods of treatment is appended, but a few notes might be added.

If an early diagnosis cannot be made as to the position of the placenta; in plugging and binding we have a sound line of treatment, equally adapted to both accidental and unavoidable haemorrhage. A general recognition of this would save practitioners much anxiety. The point is referred to by Michael Dewar<sup>34</sup>, who says that the chief point for the practitioner is to try and distinguish between the two, so that the proper treatment can be decided upon.

A case published by Jardine<sup>35</sup> also bears upon this question of differential diagnosis. A woman who had lost a considerable amount of blood for 13

COMPARISON of METHODS of TREATMENT Continued

hours, and was collapsed, os size of 2/-, had the vagina plugged "owing to a mistaken diagnosis of Placenta praevia". Three hours later the os was found to be fully dilated. A forceps delivery followed artificial rupture of the membranes, large clots were expressed, and saline transfusions were given subcutaneously and per rectum. She made a good recovery.

The question of intra-uterine physics is one that affords abundant scope for speculation. Clinically, plugging and binding have proved that, excepting in cases of genuine inertia, they can control the bleeding. Tweedy's<sup>25</sup> suggestion that the plugs in the fornices produce a bend in the broad ligament, at the junction of the cervical<sup>and</sup> uterine arteries, is borne out by Doyen and Hirst,<sup>36</sup> who succeed in controlling bleeding, one in post partum, the other in the performance of Hysterectomy, by pulling down the cervix. The resultant change in angle between the cervix and the lateral roof is identical.

Briefly, any comparison between the different treatments, for an average severe case, bring out the point that plugging and binding covers all the indications, and that, in doing so, it stands alone.

## COMPARISON of METHODS of TREATMENT Continued

In regard to the possibility that plugging and binding may convert an external into a concealed haemorrhage:- Plugging and binding is proved to act as a stimulus to uterine contraction. It cannot, therefore, cause paralysis of the uterus, though obviously, it is not able to prevent the onset of it in every instance.

Rupture of membranes is a means of stopping haemorrhage. Effective control by pressure is established whenever the bleeding area is directly in contact with the foetal surface that is sufficiently resistant, and capable of exact adaptation to the mass that is contracting down upon it. Also the bleeding area is diminished. Escape of blood must always follow rupture of the membranes if the uterine cavity be not at once diminished in proportion to the loss of total contents. Therefore, drainage should always be slow, and never from a uterus that is inert.

Rapid emptying of the uterus depends for its efficacy in stopping haemorrhage on the existence of good contraction and retraction. Also, it lessens the time during which bleeding can occur. No sinister allusion must be read into these words.

In regard to Hysterectomy for uterine inertia, there are not sufficient statistical data on which to form conclusions, but it has proved successful in cases.<sup>37</sup> On general surgical grounds it is obviously the line of practice that offers the best prospect of recovery, provided always that it is undertaken in time, and not as a procedure born of desperation.



## T A B L E

SHEWING THE METHODS OF TREATMENT IN THEIR RELATIONS  
TO THE PRINCIPLES OF TREATMENT.

+

### NOTE.

It is assumed that had accouchment forcé been adopted in a comparable case, it would have emptied the uterus earlier, thus lessening the time during which bleeding could occur. The bleeding which takes place during accouchment forcé, has been neglected.

Principles of Treatment.

	Expectant.	Rupture of Membranes.	Version.	Version & rapid Extraction.	Accouchement forcé.	Plugging and Binding.
A. To stop the Bleeding.	0	+	+	+	++	+
B. To relieve shock.	0	0	0	-	--	+
C. To prevent further Haemorrhage.	0	+	+	++	++	+
D. To promote delivery without shock.	+	x 0	+	--	--	+
E. To guard against Post partum haemorrhage.	+	+	+	-	--	+
	2	3	4	0	- 1	5

Refers to haemorrhage between Treatment and delivery.

\* Delays delivery but does not cause shock.

i.e. to delay delivery till the uterus has recovered tone.

Thus, on general principles, the order of selection for all cases would be -

1. Plugging and Binding.
2. Version.
3. Rupture of the Membranes.
4. Expectant.
5. Version and Rapid Extraction.
6. Accouchement forcé.

It should be borne in mind, when referring to the above table that ante partum haemorrhages, groups A and C together, account for 26% of the total deaths, that group E (post partum haemorrhages) is a contributing cause in 33%, and that 22% made up of haemorrhage and shock, are distributed in various ways among the five.

In the above table it is assumed that accouchement forcé is twice as efficient as any other method, excepting extraction, in checking haemorrhage before delivery.

TREATMENT SUGGESTED WITH DIAGNOSIS AND PROGNOSIS.

Diagnosis. In cases of external ante-partum bleeding, until the internal os admits a finger, placenta praevia cannot, with certainty, be excluded. The recognition of placenta praevia lateralis is often not made until the secundines are examined with a view to determine the relationship between the lowest lying placental border, or lobule, and the opening in the membranes. The examination should also include a search for vascular anomalies that might have caused the loss of blood. This has been pointed out by Ballantyne.<sup>52</sup> Careful note should also be made of the condition of the placenta, and of the amount and nature of the clots. Palpation of the placenta, through an os that will admit the finger, at once makes clear the condition that exists.

It is not so easy to recognise cases where there is no external bleeding. The general symptoms are those of acute anaemia, with or without shock; occurring, most likely in a multipara, toward the close of her pregnancy. The woman is anxious, and restless, she may be moaning or sighing. The skin is cold, the pulse is frequent, and of a low tension. The local sensations consist in a feeling of distention, with abdominal

Diagnosis Continued

tenderness and pain, that, when present, as is most often the case, is of a tearing character, comparable with that preceding rupture of the uterus. The pain may be unilateral, - l'empâtement à droite of M<sup>me</sup>. Henri.<sup>29</sup> Vomiting is common.

On examination, the uterus is hard, tense and tender. It may be rounded or irregular in outline. Enlargement may be obvious, but it is an uncertain sign from one examination. Gradual distention, with increasing pain, is almost pathognomonic.<sup>24</sup> There is often a trickle of blood from the vagina;<sup>18</sup> and an escape of serum, expressed from the clots, is practically constant.

The chief condition which falls to be excluded is rupture of the uterus; in such a case the usual signs, together with the history, should combine to make clear the diagnosis.

Prognosis.

In the pure external variety, the outlook for the mother is good, under any recognised treatment except accouchement force, provided that she has not had a fatal haemorrhage before assistance is at hand.

Prognosis Continued.

In cases where all, or part of, the effused blood is retained in utero, the chances of the mother would appear to depend mainly on the following factors:-

- (a) Early recognition.
- (b) The amount of haemorrhage and shock.
- (c) The degree of uterine inertia.
- (d) The onset of symptoms in relation to labour.
- (e) The treatment adopted.

## T R E A T M E N T

Firstly - Treatment directed toward stopping the bleeding, and securing a safe delivery

The following is a grouping of cases, according to the indications they afford for local treatment, when first brought under observation.

### I. External Haemorrhage.

- (1) Where the bleeding is slight, or has stopped.
  - (a) Before labour has set in.
  - (b) Where labour is in progress.
- (2) Where there is bleeding requiring treatment
  - (a) Where labour is in progress, with the os dilated.
  - (b) With a dilating os.
  - (c) Before labour has set in.

### II. Internal Haemorrhage (with or without external).

- (1) In labour, toward or at completion of the first stage.
- (2) At an early stage of labour.
- (3) A labour not advancing, from uterine inertia.
- (4) Before labour.

T R E A T M E N T .I. External.

- (1) Where the bleeding is slight, or has stopped.

- (a) Before labour has set in.

No local interference required. Palliative treatment.

- (b) Where labour is in progress.

Exclude placenta praevia, then treat the patient on expectant lines.

(2)

- (a) Where there is bleeding, with labour in progress, and the os fully dilated.

Puncture the membranes. The puncture should be made in all cases some distance from the os, in order that drainage may be gradual; thus avoiding a sudden change of intra-uterine pressure, and obviating any chance of the cord being carried down by the rush of waters. Careful control must be kept of the fundus in this and every case where the uterine contents are diminishing.

- (b) Where there is bleeding requiring treatment, with a dilating os, various lines may be adopted.

- (1) If the os is large enough to admit of turning, without any distention

†

Note on use of Champetier de Ribes bag.

The object, in this instance, is to reproduce the condition obtaining when the ovum is intact, and then to plug and bind.



T R E A T M E N T .I. External (Continued).

## (2) (Continued)

(b) With a dilating os (Continued)

## (1) (Continued)

being used, it would suffice to rupture the membranes and bring down a foot, apply a binder, and leave the delivery to nature.

or (2) Rupture of the membranes, and leave the case to nature.

or (3) Where the size of the os will not allow of version, plug the vagina, apply a tight abdominal binder, and perinaeal pad. (For a description of the technique of this procedure, see page 40 )

or (4) With premature rupture of the membranes, Version, if the os is large enough. If not, insert Champetier de Ribes bag<sup>†</sup>, apply a binder, and leave the case to nature. If the os will not admit the bag, plug and bind.

(c) Before labour has set in, plug and bind.

N.B. † Contraction, as proving the existence of muscular tone, is taken as affording an approximate assurance of potential uterine retraction.

## T R E A T M E N T .

### II. Mixed or Concealed.

- (1) Where the patient is in labour, and at the completion of the first stage, prepare her for delivery, and guard against post partum haemorrhage, by stimulating treatment if her condition demands it. Details are given under general treatment. In every case, have an assistant to control and stimulate the fundus by massage, and puncture the membranes when the uterus is contracting.† Have before hand everything in readiness to treat post partum haemorrhage; a hot douche, or better, gauze and adrenalin. If there be no post partum haemorrhage, do not hurry to express the placenta, before it is in the vagina.
- (2) Where the patient is at an early stage of labour, plug and bind at once, having stimulating treatment carried out while preparations are made.
- (3) With premature rupture of the membranes,  
Version, if the os is large enough;  
apply a binder, and leave to nature.  
If/

T R E A T M E N T.II. Mixed or Concealed (Continued).

## (3) (Continued)

If not large enough, insert a Champetier de Ribes bag, pack round it and bind.

If the os will not admit the bag, plug and bind.

(4) Uterine inertia during labour.

The choice here lies between plugging and binding, and Hysterectomy. Any external bleeding would be a point in favour of adopting the former method.

(5) Before labour, with a closed, or hard os.

If the symptoms are severe, and there is no external haemorrhage, Hysterectomy would seem to be the treatment of election; failing which, plugging and binding.

If there is to be delay before the operation, plug and bind at once as a preliminary treatment.

NOTES on TREATMENT AFFECTING DELIVERY.

I. Indications for removal of plugs.

- (a) Remove a few of them when they are beginning to bulge at the outlet in consequence of uterine contractions. The remainder will be delivered with the child.
- (b) Remove them all when, judging from the amount and character of the pains, (considered in relation to the state of the cervix when plugging was performed), the os may be assumed to be nearly or fully dilated. When in doubt, leave them alone. Plug again if they have been removed too soon; if not, puncture the membranes.
- (c) If much blood is coming through the plugs, take them out and replug, or Hysterectomy. When in doubt, leave them alone.
- (d) Remove them all when they have been in situ for 24 hours. If necessary, wash out the vagina and replug.

II. Indication for Forceps or Craniotomy.

A tedious or difficult labour, that might,  
if/

NOTES on TREATMENT AFFECTING DELIVERY (contd.)II. Indication for Forceps or Craniotomy (contd.).

if left alone, have a bad effect on the mother. There must be no sudden stretching of the cervix; extraction must be very gradual.

III. After-treatment of Version.

If required, exert traction on the leg by means of a fillet of gauze attached to a weight over the foot of the bed.

IV. Control of the Fundus.

This must be unremitting.

V. Post partum Haemorrhage.

Pack the uterus at once with gauze soaked in adrenalin.

VI. General after-treatment.

Apply warmth; give frequent hot nourishment, and morphia if required.

VII. Ergot.

This drug is not contra-indicated in this condition, and may be given at discretion before the uterus is emptied.

DESCRIPTION OF THE DUBLIN METHOD  
of Plugging the Vagina, Binding the Abdomen and  
applying the perinaeal Bandage, as described by  
Tweedy, and modified by Purefoy.

The description is, in the main, an extract from Colcough's paper. The plugs used are small tampons of sterilised cotton wool about the size of a large walnut. Lysol, creolin, and perchloride of mercury are the antiseptics used.

After all the necessary antiseptic precautions usual for any obstetric operation have been taken, a catheter is passed and plugging is proceeded with as follows:- With the patient in the lithotomy position, and with or without a speculum, the plugs, taken separately from the solution and wrung dry, are systematically packed into the vagina. The first one is placed in the posterior fornix, thence proceeding on both sides, till the fornices are systematically packed with a fair amount of pressure. Each plug is put in with a purpose to form a ring round the cervix. The process is continued until no more can be introduced. The operator then takes a large strip of iodoform gauze and places it over the plugs, which will be projecting from the vagina, having the gauze held in position while the binder and T bandage are being applied. The iodoform gauze is not essential, but is of practical value. If

Technique of Plugging and Binding Continued

chloroform be given, only a few whiffs are required.

The Application of the Binder and Perinaeal Bandage

The binder should have been placed under the patient before the plugging was commenced. Strong pins and a stout binder are needed. The first pin must be placed above the fundus, as near to the ensiform cartilage as possible, and the binder secured extremely tightly downwards as far as the symphysis. The T bandage is then put on with the long tail to the back, and the short ends fastened in front. The tail is brought from behind forwards over the perinaeum, pressure on the vaginal plugs not being relaxed until this bandage is in position. The tail is then brought up over the front of the abdomen and under the fastened ends of the bandage, above the fundus. By turning it down again and pulling, the desired degree of pressure can easily be exerted. It is then securely fastened in position.

Pass a catheter six hours later, readjust the pad, and tighten up the T bandage and binder.



GENERAL TREATMENT.

Severe accidental haemorrhage is the most serious complication that can befall a woman at the time of labour, and to grapple with it, the resources known to general and obstetric therapeutics will be strained to their utmost limit, in preparation of the woman for delivery or operation, and in bringing her to safety afterwards. No detailed account of these resources is called for here. The cause they have in common, namely, loss of blood, leading towards collapse along the paths of either syncope or shock (according to the vital organs most affected and to the other factors present) makes possible a general line of treatment that can be adapted to meet the necessities of any woman who may be in need of help. Indications for drugs must be met as they arise, and do not call for comment here. Strychnine and digitalin or strophanthin are perhaps the most generally useful. Treatment by replacing the fluid that is lost is shewn abundantly to be one of great value. Halliday Croom,<sup>38</sup> in reporting a case of remarkable recovery from haemorrhage with placenta praevia, writes as follows: "We feel sure that in the treatment of placenta praevia plugging and transfusion/

GENERAL TREATMENT (contd.)

transfusion in extreme cases before operative measures have been had recourse to will sometimes save a life. . . . There can be no doubt that many cases of placenta praevia are lost by interference while the patient is collapsed from loss of blood."

<sup>43</sup> Edward Carmichael first suggested the employment of syphon action and the introduction by this method of one to four pints of fluid. With regard to the absorption of fluid by the bowel, Warman was of opinion that this took place in direct proportion to the amount of blood that had been lost. Foggie,<sup>43</sup> in his paper on the subject, concluded that the intra vascular method was the most effective, subcutaneous injection coming second; and that rectal infusion was best adapted to an ordinary case.

When symptoms of shock are more prominent, the primary object is to raise the blood pressure, and by improvement of the circulation to secure a restoration of tone for the nerve centres that have lost their function. The first line of treatment is therefore directed at overcoming the splanchnic dilatation. Crile<sup>32</sup> has devised a pneumatic suit which, on inflation, exerts an equable/

GENERAL TREATMENT (contd.)

equable pressure on the legs and abdomen, thus effecting an autotransfusion. In tight bandaging of the legs and thighs, raising the foot of the bed, together with the use of the plug and binder, we have at hand a method that should approach it in efficiency. The second line of treatment is to bring about constriction of the vessels, by acting on them directly through the blood stream.<sup>32</sup> This is done by an intravenous saline transfusion containing adrenalin,<sup>41</sup> at about the strength of one drachm to the pint of a 1 in 1000 solution. It is important, owing to the rapid oxidation of adrenalin, and its consequently transitory effects, that the fluid should enter the vein slowly and well diluted, thus prolonging the action.

# S U M M A R Y

## CLINICAL FEATURES INDICATIVE OF VARIOUS LINES OF TREATMENT..

<u>Clinical Features</u>	<u>Treatment Indicated</u>
<b>A. <u>General</u></b>	
I. Moderate Symptoms due to Haemorrhage	Stimulation, Hot rectal Salines
II. Severe Symptoms due to Haemorrhage or Shock	Raise the foot of the bed. Bandage the legs, bind the abdomen. Intravenous transfusion of Saline with adrenalin.
<b>B. <u>Obstetrical</u></b>	
I. Slight Symptoms . . .	<u>Expectant</u>
II. Full dilatation of the os.	<u>Rupture of the Membranes</u>
III. No internal bleeding, with partial dilatation of the os	<u>Version.</u> (Provided always that the manipulations involve no stretching of the cervix)
IV. Internal or external bleeding with the membranes ruptured, and an os that will admit of version, without the risk of being stretched	<u>Version.</u>
V. Internal or external bleeding, with the membranes ruptured, and an os that is large enough to admit the bag, but small enough to invoke the risk of being stretched by version	<u>Dilatation</u> by means of Champetier de Ribes Bag.
VI. Severe internal Haemorrhage with marked or absolute inertia	<u>Hysterectomy</u>
VII. (1) All other cases (2) As an alternative for Group III. (3) Failing Hysterectomy, Group VI.	<u>Plugging and Binding</u>

C O N C L U S I O N

In the words of Velpeau,<sup>39</sup> "The principles of the science of obstetrics give to the resources it employs a degree of precision that causes it to approach in certainty to the mathematical sciences."

In most obstetric problems there are two lives of which the chances fall to be considered. Even in a Roman Catholic community, where the mother's life is held as of the lesser value, it is granted as useless to work for the delivery of a living child, and by so much is the present problem simplified.

To attain the satisfaction afforded by this mental standpoint, the field of vision must include nothing but essentials, grouped together in comparison. Thus it is necessary to keep always in mind, and balance one against the other, the two means of recovery, with the risks and gains that are attached to either - the one the natural process, and the other the employment of artificial methods by which we may attain the like desired end.

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